

Fairfax County Energy Task Force

Meeting Notes

April 28, 2011

1. Welcome and Introductions

Fairfax County Board Chairman Sharon Bulova welcomed the task force and initiated a round of introductions. She then recognized that Fairfax County is at a perfect place in time to focus on energy for several reasons; now is a pivotal time for emerging technology and the County is at the cusp of numerous major redevelopment and revitalization efforts.

Chairman Bulova also highlighted a Washington Post article with a positive review of ongoing Fairfax County efforts. The article was particularly complementary of the process engaging the private sector.

2. Meeting Focus

Leo Schefer reviewed the topics of the group's first two meetings – *Energy 101* and *Existing energy planning actions in Fairfax and the Region*. This and future meetings are to address what advice the Task Force should give to the County leadership. The April 28 meeting also would look at potential for breakthrough technologies.

3. Fairfax News

Dave Molchany, Deputy County Executive, updated the Task Force on Fairfax County's recent accomplishments.

- Info World selected the County as one of 5 "Green Winners" for the year for the pc power management project which automatically turns off computers resulting in over \$300,000 savings. One positive aspect of being recognized is being in company with other big private company leaders.
- Other projects underway include the consolidation of servers, which has significant CO₂ reductions. He noted that the federal Department of Energy is particularly interested in that project because of the value in data centers becoming more efficient.
- Fairfax County library renovations meeting LEED gold and silver designations.

4. Panel: Breakthrough Technologies for Fairfax County

Moderator – Douglas Koelemay, Panelists – Philip Sandino, Michael Mondshine, Tom McCabe, Doug Carter

Doug Koelemay, Vice President, Community Relations, SAIC, facilitated the panel.

Philip Sandino, Director, Customer Solutions for Dominion in the region spoke first. He explained Dominion's smart grid focus.

- Three pilots have been deployed with over 100,000 smart meters in total in Midlothian, Falls Church area, and Charlottesville – all on residential properties.

- Each location was chosen because they are distinctly different (suburban, rural, urban).
- Dominion Power, as a regulated utility, is required to prove the benefits of new concepts to the State Corporation Commission before they can be applied broadly.
- AMR meters can be read from a truck. The new AMI meters can be read continuously via wireless connection from headquarters – an obvious cost saving. Dominion Power is required to maintain a guaranteed voltage for all consumers. To achieve this they “pump up” the voltage to ensure they meet the guarantee for the last customer on the line. The AMI meter tells the company the voltage in real time at the end of the line, and thus enables Dominion to adjust the overall power supply, which can produce further energy savings.
- The AMI meter provides instant knowledge of outages. The customer no longer has to call in.
- The AMI meter enables Dominion Power to disconnect and connect a customer’s power supply remotely.
- Collectively, this eliminates “truck rolls” which on average cost \$500 each.
- An AMI meter costs from \$200 to \$500 to install, compared to \$50 for the older AMR meters.
- AMI meters will enable the company to provide different rates for different times of the day. This will help “migrate” the charging of electric vehicles to the low-cost nighttime hours.

Tom McCabe, Corporate Director of Environmental, Health and Safety for Northrop Grumman informed the Task Force of his company’s efforts to reduce their impact.

- Northrop Grumman has set a goal of reducing its carbon footprint by 25% (normalized to sales) over five years throughout their nationwide organization. The company is using carbon intensity to assess its comparative performance.
- All company sectors are signed on to the goal, including the corporate office, which just relocated its headquarters to Falls Church, VA.
- In Virginia, they gained a major reduction in their carbon footprint when they “spun” their shipbuilding sector, which leaves them as largely an office-based company within the Commonwealth.
- Their corporate office challenge in Virginia is to offset their new carbon footprint, as a high percentage of the new corporate office electricity is provided from coal-fired power generation.
- In addition to Northrop Grumman’s efforts to reduce its carbon footprint, they have also instituted programs to adopt best management practices associated with water use and solid waste management.
- Northrop Grumman is launching a solar project in California and will consider other projects once they have evaluated the performance of the California project..
- The United States Navy has set a goal of a “green fleet” that includes Naval aviation as well as ships, so Northrop Grumman has worked with the Navy to test bio-jet fuel.
- The company is trying to be responsive to its government customers as well as reducing its own environmental footprint. Some of its government customers include NASA, DOD, U.S. Navy, U.S. Air Force, U.S. Army, and U.S. Marine Corps.

Michael Mondshine, Vice President and Senior Policy Analyst, Energy, Environment and Infrastructure Solutions, SAIC.

- The business case for energy reduction is stronger than the moral case for many companies.
- As the Chairman noted, we are at a pivotal time, as technical change is coinciding with opportunities to redevelop.
- The opportunity is now, and it's ephemeral. If we build and redevelop to the old paradigm, we're stuck for 50 years and lose the opportunity.
- Distributed energy – Arlington has spelled out the macro benefits. The commercial benefits include less building space being taken up with heating and cooling machinery, less noise from such machinery, and this leads to bottom line benefits.
- Before developers can move toward distributed energy developments, they need to be assured that the energy will be there, so the county needs to find a way to provide that guarantee.
- The gains come, not from individual technologies, but through the combination of technologies. As the number of technologies increase, the benefits expand. For example, rooftop photo voltaic plus ice storage cuts the payback time for the installation by one-third. Also, AMI provided by the electric utility could provide a backbone for water metering as well, generating a faster payback for the electric company.
- It's better to do something that's not yet perfect than to do nothing while waiting for what is perfect.

Doug Carter, Principal in Charge at Davis, Carter, Scott presented next.

- The short answer to breakthrough technologies is “partnership”. Nearly 40 years ago after the first oil embargo, the Fairfax school system sought an energy efficient school. The result was literally a buried elementary school for 1,000 students, which cut energy consumption 59%, compared to a conventional school at that time.
- One cannot go beyond a single LEEDs certified building alone. It has to be a partnership.
- Five thoughts:
 - 1) There is no better way to save energy than high density mixed use, so the county needs to continue to encourage the private sector to do more in this area.
 - 2) We should explore new innovative transportation solutions, like PRT.
 - 3) We need design changes to create affordable workforce housing as part of dense developments.
 - 4) Incentives are required to stimulate use of new technologies. This will require new measurements so the benefits can be made visible.
 - 5) We need to move beyond the current concept of “going green”. For example, use plasma converters to vaporize trash and generate energy.

5. Discussion

If government is a driver of change, what county changes would help?

- Doug Carter: Fairfax is in the forefront of zoning, but could do more on permitting. For example, regulations on storm water management don't allow for new technologies.
- Phillip Sandino: Permitting – also, Dominion Power has a clearing house for new ideas developed by others, but “whatever we do has to make business sense”.

- The SCC, not the county, regulates Dominion Power.
- Brookfields has just opened an energy laboratory house in Winchester, which covers 1,400 sq. ft.
- Wind and solar energy has a low payback. Geothermal has a better payback.
- Tom McCabe of Northrop Grumman noted that Fairfax permitting was extremely good compared to California, which is “a nightmare”. Tom also noted that Northrop Grumman’s energy saving program comes “of our own accord, not from the county” i.e. they are doing it to cut costs.

What are the impediments in Virginia to “local power”?

- Doug Carter noted DCS’ West Virginia project, which includes hydrogen-powered homes, possible in West Virginia because of the freedom from barriers.
- A key barrier is how to get the critical mass together for a district energy group.
- Another barrier is finances, as capital is often averse to new ideas.
- Washington Gas is looking at scaled opportunities in Arlington.
- Solar works in Maryland where energy costs are higher and incentives are provided. Solar does not work in Virginia due to the lower cost of electricity and the lack of incentives.

Does the county need authority from the state to move forward on energy concepts?

- Chairman Bulova noted that it was important to partner with the utilities. “We don’t want to be in conflict at the General Assembly”.
- Could Fairfax do a franchised energy distribution project in a redevelopment area? Would this bring in private partners?
- Some parts of California require incentives for transit and ride sharing from companies employing more than 200 people.
- SAIC noted that internal incentives can create more bang from the buck, given help from the county.

Does a company need a government incentive to reduce energy, or is it driven by the market, i.e. the high cost of fuel?

- It’s both. Government action can trigger a corporate review of energy use, but then their company is likely to find they can achieve a major payback. But the changes defined may need county or state permission.
- Partnerships can generate a much bigger return.
- Reston parking: There is an excess for some buildings, a lack in others, but agreements connected to the older buildings inhibit using the excess to solve the problem. The county needs to be the honest broker and facilitator.
- The City of Norfolk owned a whole city block, gave the land to a developer and built the parking as an incentive. Norfolk is broken into districts, which makes this possible.
- Could Fairfax create “energy districts”?

- For district energy, Tysons provides a huge opportunity. To achieve that opportunity, the utilities will need to profit and the county will need an appropriate regulatory and permitting process.

Dean Tistadt was asked to comment on the energy reduction steps taken by the county schools.

- Roofs have been painted white, which was found to be much more cost effective for carbon reduction than a vegetative cover. (The latter is better for storm water runoff.)
- Geothermal is proving effective.
- The lighting has been replaced with energy efficient systems, but teachers and students still have to be encouraged to turn off the lights.
- At the Bull Run School, all students are eligible to use the school buses, but 200 students still come to school each day by car. These examples point to the need for behavioral change.
- Saving energy “has to become inherent in the culture”.

Final Thoughts

- Could local government use its taxing powers to provide incentives for homeowners? Could the level of real estate tax be reduced for energy reduction and vice versa?
- The German Ministry of Defense sought to incite energy efficiency with its “Mission E”.
- The financial industry may not be thrilled by energy efficiency initiatives, and this could affect mortgages.
- We need a roadmap. For example, how does Virginia work? What do we want to do? How could it be financed? How would it affect individuals in the county? (The May 26th agenda will cover some of these questions.)
- Virginia considers any group that generates its own energy as a utility, and the Commonwealth regulates utilities.
- Fairfax County has 16,000 employees and is working with them to encourage behavioral change, i.e. turning lights out.
- We should explore “power partnerships”. Fairfax County is working with property owners on such strategies for Tysons.
- Money is often cited as the barrier, but it’s not money, its attitude and will.
- We need transparency, education and power generated at source.
- Let’s underline power partnership.
- Don’t discount technology: it can change behavior.
- Retrofitting older buildings can be surprisingly attractive.
- Northrup Grumman and General Dynamics, are working to create a bus link to the Dunn Loring Metro stop. Whatever goal is set needs to have a behavioral element to it.
- Keep in mind safety.
- We need a holistic approach which embraces all the utilities and is technically and financially scalable.
- Wind and solar electrical sources are “patchy” generators and have to be combined with something else if they are to achieve the level of reliability the consumer expects, i.e. either batteries or combination with the traditional grid.
- We need a matrix of what’s available and we need to go after the low hanging fruit via education of the next generation.

- Behavioral change also applies to all the rules, from permitting to payback. For example, some energy companies look for a 2.5-year payback for their investment in new concepts.

6. Status of Fairfax Energy Inventory

The basic findings should be available for the May 26th meeting and will be followed by a full report at a later date.

7. Next Meeting

Chairmen Bulova concluded the meeting and thanked everybody for their participation.

The next meeting date is May 26th, 2011.